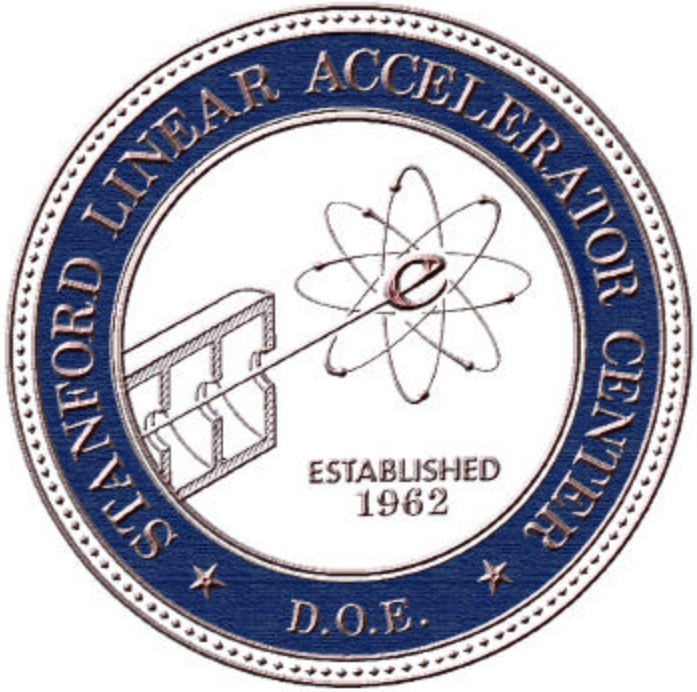
# US LC Steering Group Report




**Presentation by**

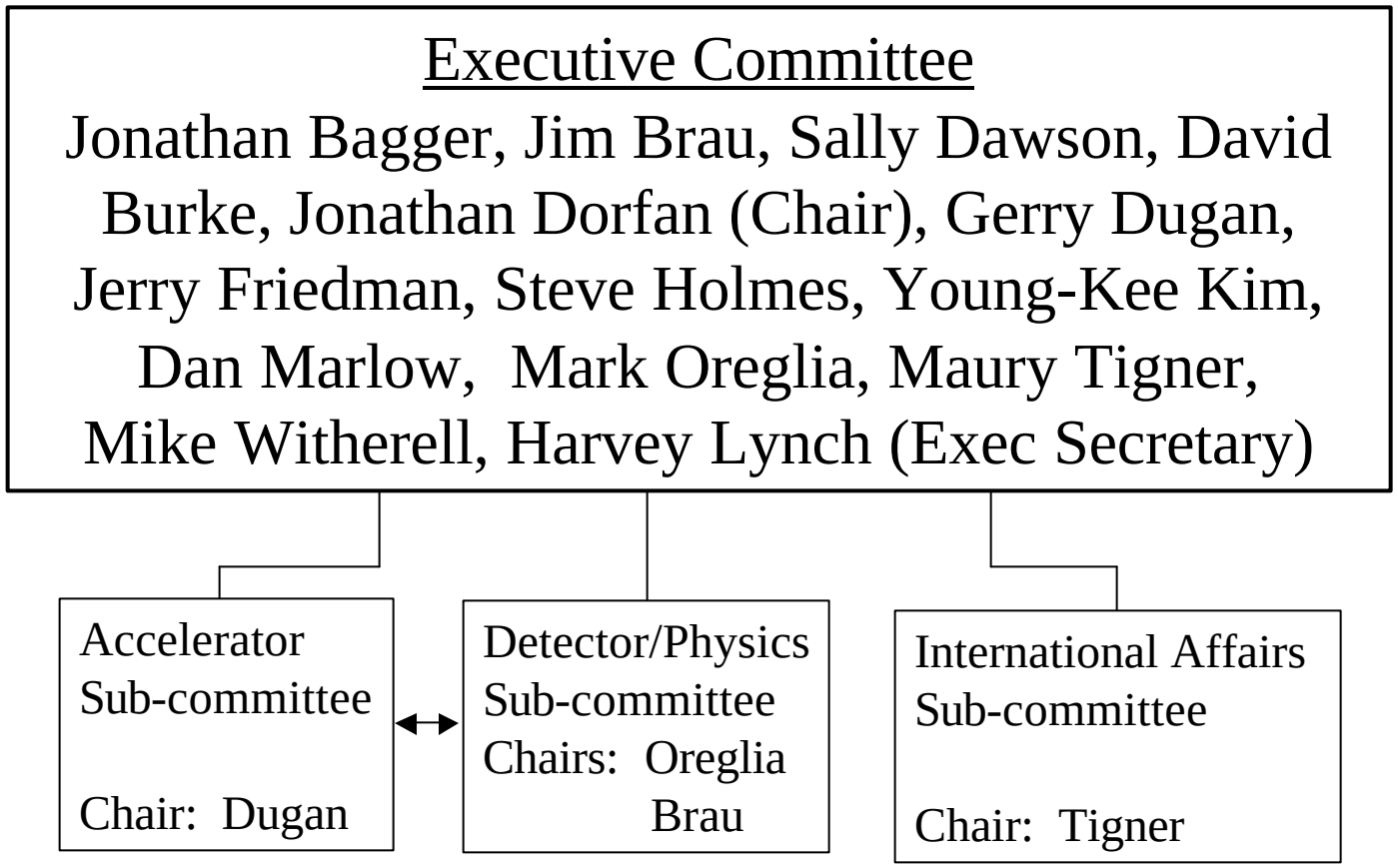
**Jonathan Dorfan, Director**

**at**

**HEPAP**

**November 7, 2002**

# US Linear Collider Steering Group



# USLCSG

- **Steering Group has met twice since the last HEPAP meeting**
  - **Next meeting is Nov 25, 2002**
- **USLCSG was able to facilitate an in-depth review of university-led LC proposals for both detector and machine R&D proposals**
  - **Community is to be commended for the co-operative manner in which they worked to produce two high quality consortium documents**

# U.S. LC Steering Group Meeting

**8 August 2002 08:00 to 10:00 PDT**

## Agenda

1.) **Status and timetable for R&D Proposal Submission**
**Tigner/Brau**

2.) **Status of formation of Detector Review Committee and Charge**
**Brau/Oreglia**

3.) **Status of formation of accelerator Review Committee and Charge**
**Dugan**

4.) **Timetable, Process and Desired Outcomes from the Review Week**
**All**

5.) **News from the International Steering Committee/ICFA**
**Tigner/Dorfan**

**---------- BREAK FOR LUNCH ----------**

# U.S. LC Steering Group Meeting

**12:00 to 15:00 PDT**

6.) **Report from Communications + Outreach Committee**
**Bagger/Dawson**

7.) **International Affairs Subcommittee --Finalize discussion of charge**
**Tigner**

8.) **News from DC/HEPAP**
**Bagger/Dorfan**

9.) **German Council's Report- What Does it Mean?**
**Tigner, Burke**

10.) **Next Steps For U.S. Planning – Returning to Our Task of Establishing Near term Timeline**

11.) **Set future meeting dates**

# U.S. LC Steering Group Meeting

**23 Sept 2002 10:30 to 14:00 PDT**

## Agenda

- **Discuss results of the R&D Review evaluations**
  - **What issues arose?**
  - **How are the committee's evaluations to be made known?**
  - **How are the Reports to be submitted to the agencies?**
  - **How much iteration can the proponents do between the review and submission to the agencies?**
- **Scope of machine parameters charge to Physics and Detector subgroup**
  - **Should this be a US document?**
  - **Should this be an international document?**
  - **The World Wide Working Group will prepare a scope document for the International Steering Group**
- **Report from the Loew Panel Meeting**
  - **Changes in the X Band baseline**
  - **Changes in TESLA**
  - **Other**

# U.S. LC Steering Group Meeting
## (continued)

- **The Long Range Plan**
  a) **Discussions in Washington**
  b) **Report from Outreach (Bagger/Dawson)**
  c) **“Getting Real” about the Bid to Host (On-Shore) model**
  d) **“Getting Real” about the Off-shore model**
- **Set up future meeting dates**

# R&D Proposals for both Machine and Detector Work

- **Short Time Line**
  - 31 May workshop at SLAC on machine work
  - 27-30 June workshop at Santa Cruz on detector work
  - 3 September proposals received
- **Review Committees Met 9 – 10 Sept at FNAL**
  - Evaluated proposals and submitted report
- **Combined Proposals involve**
  - 71 projects of high quality from 47 universities and 22 states
  - 42 proposals for machine work
  - 29 proposals for detector work
  - Total request for funds exceeds expected money available

# How did we get here?

- Last spring, following the release of the HEPAP report, US community began developing plans for an R&D program and proposals to the funding agencies
- Organizational meetings were held at Fermilab, Cornell, and SLAC
  - ALCPG working group leaders led discussions on R&D opportunities
  - eventually the DOE groups consolidated into the LCRD and the NSF groups into the UCLC
- The US Linear Collider Steering Group developed a plan on how to deal with these proposals:
  - create two review committees, one for detector and one for machine
  - have the proposals reviewed at the task by task level
- The funding agencies responded to the ground-swell of interest within the community and developed a plan for the scope of the program

# The Internal Review and Proposal Development

- The American Linear Collider Physics Group (ALCPG) met at Santa Cruz in June, and there was much discussion on how to proceed to proposals
- Coming out of that meeting, there was an agreement from both the NSF and DOE groups to
  - submit Expressions of Interest by August 1
  - Expressions of Interest were reviewed by the ALCPG working group leaders by August 6, providing criticism and recommended revisions
  - Proposals were collected by September 3
- The LCRD and the UCLC joined into a single national coordinated document to the US LC Steering Group
  - LCRD: D. Amidei, G. Gollin, J. Jaros, A. Kronfeld, U. Mallik
  - UCLC: R. Patterson, J. Rogers, G. Dugan

# American Linear Collider
# Physics Group / Working Groups

**Detector and Physics Simulations:**
Norman Graf/Mike Peskin

**Vertex Detector:**
Jim Brau /Natalie Roe

**Tracking:**
Bruce Schumm/Dean Karlen/Keith Riles

**Particle I.D.:**
Bob Wilson

**Calorimetry:**
R. Frey/A. Turcot/D. Chakraborty

**Muon Detector:**
Gene Fisk

**DAcq, Magnet, and Infrastructure:**
(inactive)

**Interaction Regions, Backgrounds:**
Tom Markiewicz/Stan Hertzbach

**IP Beam Instrumentation:**
M. Woods /E. Torrence/D. Cinabro

**Higgs:**
R. Van Kooten/M. Carena/H. Haber

**SUSY:**
U. Nauenberg/J. Feng /F. Paige

**New Physics at the TeV Scale and Beyond:**
J. Hewett/D. Strom/S. Tkaczyk

**Radiative Corrections (Loopverein):**
U. Baur/S. Dawson/D. Wackeroth

**Top Physics, QCD, and Two Photon:**
Lynne Orr/Dave Gerdes

**Precision Electroweak:**
Graham Wilson/Bill Marciano

**gamma-gamma, e-gamma Options:**
Jeff Gronberg/Mayda Velasco

**e-e-:**
Clem Heusch

LHC/LC Study Group
- chaired by H. Schellman and F. Paige

Liaison to accelerator R&D
T. Himel, D. Finley, J. Rogers

**http:blueox.uoregon.edu/~jimbrau/LC/ALCPG**

# LC R&D Review Committees

- **Detector Committee:**
  - Howard Gordon, Brookhaven (chair)
  - Rolf Heuer, U. Hamburg
  - Steve Olsen, U. Hawaii
  - Mike Roney, U. Victoria
  - Sally Seidel, U. New Mexico
  - Hitoshi Yamamoto, Tohoku U.

- **Accelerator Committee**
  - Norbert Holtkamp, ORNL (chair)
  - Phil Burrows, Oxford
  - Jean Delayen, JLab
  - Tom Himel, SLAC
  - Hugh Montgomery, Fermilab
  - Katsunobu Oide, KEK

# The Charge
## (For Detector Review Team)

**The success of the Linear Collider physics program depends on optimizing the accelerator technology, and capitalizing with optimal detectors on the opportunity afforded by machine performance. While much progress in detector development has been made in recent years, especially through R&D for the LHC, different optimizations are needed for the Linear Collider experiments. There is time now to develop these technologies, and to discover and pursue new ideas which can further enhance the physics reach.**

**With this in mind, the Linear Collider R&D Review Committee is charged to**

*** Prioritize the elements of the proposals in the light of the R&D needs of the worldwide linear collider effort. Considerations entering into the prioritization should include the relevance and importance of the work to the perceived needs of the Linear Collider detectors, the lead-time requirements for the proposed R&D, and the experience and track record of the proposers. Novel ideas which have potential to impact the detector designs significantly should be identified with favor.**

*** Co-ordinate the elements of the proposals by identifying areas of overlap, within a single consortium proposal, between the proposals, and within the international R&D program. Suggest possible realignments of the efforts which would eliminate unnecessary redundancy.**

**The committee should refer to the document "Linear Collider Detector R&D" by the international linear collider detector R&D committee chaired by R. Heuer.**

# Further Guidance

## (For Detector Review Team)

- **There is additional guidance (besides the charge) from the Steering Group on what they would like coming from this review.**
- **They would like you to provide:**

  **1.) a rating for each proposal (e.g. excellent, good, satisfactory, or poor) based on factors such as clarity of goals, feasibility, strength of the participants, etc;**

  **2.) a catagorization of the relevance of each proposal (e.g. critical R&D, important R&D, useful R&D, or irrelevant);**

  **3.) and a rank-ordering of the proposals. This rank-ordering likely will be a grouping of the proposals into tiers (e.g. first priority, second priority, defer, or drop). You may need to indicate why you recommend to drop a proposal, but everyone recognizes you will not have time to write much verbage.**

**Please keep an eye on the total cost of the proposals. The budgets are not certain, but the guidance is that the Funding Agencies will try to provide a growing total of approximately 1M$ in FY03, 2M$ in FY04, and 3M$ in FY05 for university-based detector R&D. You will not need to worry about whether the funds are DOE or NSF. So for example, the first tier would be a mixture of "excellent" and "good" proposals that sum to approximately 1M$ in FY03 and are aimed at "critical", "important", or "useful" R&D goals. Since the funding is uncertain, the second tier will also be important, and should not consist of just every proposal that does not make it into the first tier.**